CLAIMS

1. An apparatus comprising:

a film bulk acoustic resonator (FBAR) filter having an input and an output; and

an impedance matching unit coupled to one of the input and the output of the FBAR filter.

2. The apparatus of claim 1 wherein the FBAR filter comprises ladder-type FBAR filter.

3. The apparatus of claim 1 wherein the FBAR filter comprises a lattice-type FBAR filter

4. The apparatus of claim 1 wherein the impedance matching unit comprises a shunt capacitor followed by an in-line inductor.

5. The apparatus of claim 1 wherein the impedance matching unit comprises an in-line inductor followed by a shunt capacitor.

6. The apparatus of claim 1 wherein the impedance matching unit comprises a shunt inductor followed by an in-line capacitor.

7. The apparatus of claim 1 wherein the impedance matching unit comprises an in-line capacitor followed by a shunt inductor.

8. The apparatus of claim 1 wherein the impedance matching unit comprises a shunt inductor followed by an in-line inductor.

9. The apparatus of claim 1 wherein the impedance matching unit comprises an in-line inductor followed by a shunt inductor.

10. The apparatus of claim 1 wherein the impedance matching unit comprises a shunt capacitor followed by an in-line capacitor.

11. The apparatus of claim 1 wherein the impedance matching unit comprises an in-line capacitor followed by a shunt capacitor.

12. The apparatus of claim 1 wherein the impedance matching unit comprises a balanced/unbalanced (balun) circuit.

13. The apparatus of claim 1 wherein the impedance matching unit comprises a coil transformer.

14. An apparatus comprising:

a film bulk acoustic resonator (FBAR) filter having an input and an output;

an input impedance matching unit coupled to the input of the FBAR filter; and

an output impedance matching unit coupled to the output of the FBAR filter.

15. The apparatus of claim 14 wherein the input impedance matching unit and the output impedance matching unit have different constructions.

16. The apparatus of claim 14 wherein the input impedance matching unit and the output impedance matching unit have the same construction.

17. The apparatus of claim 14 wherein the impedance matching unit comprises a shunt capacitor followed by an in-line inductor.

18. The apparatus of claim 14 wherein the input impedance matching unit or the output impedance matching unit comprises an in-line inductor followed by a shunt capacitor.

19. The apparatus of claim 14 wherein the input impedance matching unit or the output impedance matching unit comprises a shunt inductor followed by an in-line capacitor.

20. The apparatus of claim 14 wherein the input impedance matching unit or the output impedance matching unit comprises an in-line capacitor followed by a shunt inductor.

21. The apparatus of claim 14 wherein the input impedance matching unit or the output impedance matching unit comprises a balanced/unbalanced (balun) circuit.

22. A system comprising:

an input circuit; and

a filter coupled to the input circuit, the filter comprising:

a film bulk acoustic resonator (FBAR) filter having an input and an output, and

an input impedance matching unit coupled to the input circuit and to the input of the FBAR filter.

23. The system of claim 22, further comprising:

an output circuit; and

an output impedance matching unit coupled to the output circuit and to the output of the FBAR filter.

24. The system of claim 23 wherein the input impedance matching unit and the output impedance matching unit have different constructions.

25. The system of claim 23 wherein the input impedance matching unit and the output impedance matching unit have the same construction.

26. The system of claim 22 wherein the input impedance matching unit or the output impedance matching unit comprises a shunt capacitor followed by an in-line inductor.

27. The system of claim 21 wherein the input impedance matching unit or the output impedance matching unit comprises an in-line inductor followed by a shunt capacitor.

28. The system of claim 21 wherein the input impedance matching unit or the output impedance matching unit comprises a shunt inductor followed by an in-line capacitor.

29. The system of claim 21 wherein the input impedance matching unit or the output impedance matching unit comprises an in-line capacitor followed by a shunt inductor.

30. The apparatus of claim 21 wherein the input impedance matching unit or the output impedance matching unit comprises a balanced/unbalanced (balun) circuit.

31. A process comprising:

providing a film bulk acoustic resonator (FBAR) filter, the FBAR filter having an input impedance and an output impedance;

matching the impedance of an input circuit to the input impedance of the FBAR filter; and

matching the output impedance of the FBAR filter to the impedance of an output circuit.

32. The process of claim 31 wherein matching the impedance of the input circuit to the input impedance of the FBAR filter comprises coupling an impedance matching unit to the input circuit and to the input of the FBAR filter.

33. The process of claim 32 wherein the input impedance matching unit comprises a shunt capacitor followed by an in-line inductor.

34. The process of claim 32 wherein the input impedance matching unit comprises an in-line inductor followed by a shunt capacitor.

35. The process of claim 32 wherein the input impedance matching unit comprises a shunt inductor followed by an in-line capacitor.

36. The process of claim 32 wherein the input impedance matching unit comprises an in-line capacitor followed by a shunt inductor.

37. The process of claim 31 wherein matching the output impedance of the FBAR filter to the impedance of the output circuit comprises coupling an impedance matching unit to the output circuit and to the output of the FBAR filter.

38. The process of claim 37 wherein the output impedance matching unit comprises a shunt capacitor followed by an in-line inductor.

39. The process of claim 37 wherein the output impedance matching unit comprises an in-line inductor followed by a shunt capacitor.

40. The process of claim 37 wherein the output impedance matching unit comprises a shunt inductor followed by an in-line capacitor.

41. The process of claim 37 wherein the output impedance matching unit comprises an in-line capacitor followed by a shunt inductor.

42. The process of claim 37 wherein the output impedance matching unit comprises a balanced/unbalanced (balun) circuit.